

DEBRA S. KNOPMAN

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EMPLOYMENT

2014 - **Principal Researcher and Professor, Pardee RAND Graduate School, RAND Corporation, Arlington, VA**

Co-principal investigator or team member for projects on national infrastructure policy; long-term water and coastal planning and management; urban adaptations to climate change; energy assurance, capability development, and other planning issues for the Air Force; energy and environmental policy, nuclear waste policy. Service on dissertation committees in the Pardee RAND Graduate School.

2004 - 2014 **Vice President and Director, RAND Justice, Infrastructure, and Environment (JIE), and Professor, Pardee RAND Graduate School, Arlington, VA**

RAND corporate officer responsible for JIE, a RAND research division encompassing Homeland Security; Safety and Justice; Environment, Energy, and Economic Development; and Transportation, Space, and Technology; and the RAND Gulf States Policy Institute.

2001-2004 **Associate Director, RAND Science and Technology, RAND Corporation, Arlington, VA**

Quality assurance coordinator for the RAND S&T requiring early review of research proposals and draft reports, selection of peer reviewers, and evaluation of authors' responsiveness to reviewers' comments. Research portfolio centered on environmental, energy, and science and technology policy issues.

1997-2003 **Member, U.S. Nuclear Waste Technical Review Board, Arlington, VA**

Presidential appointee to an 11-member board established to provide technical oversight of the civilian high-level nuclear waste management program, primarily focused on Yucca Mountain, Nevada. Chaired Board's Site Characterization Panel.

1995-2001 **Director, Center for Innovation & the Environment, Progressive Policy Institute, Washington, DC**

Founded and directed program for a non-profit, public policy think tank to develop and promote a second generation of environmental and natural resources policies designed to achieve further environmental improvements with greater efficiency and effectiveness than current policies.

1993-1995 **Deputy Assistant Secretary for Water and Science, Department of the Interior (DOI), Washington, DC**

Provided significant policy and management oversight of the Bureau of Reclamation, the U.S. Geological Survey, and the U.S. Bureau of Mines, including organizational design issues. Major issue work included Western water policies, roles of Federal research agencies, spatial data policies, Clean Water Act reauthorization, Central Utah project, and the proposed Ward Valley low-level waste site. Managed all operations of the Office of the Assistant Secretary for Water and Science; chaired the DOI Science Coordination Board, Working Group on Clean Water Act reauthorization, Interior Geographic Data Committee, and DOI Education Committee.

1984-1993 **U.S. Geological Survey, Reston, Virginia**

Chief, Branch of Systems Analysis (1991-1993); staff hydrologist, Branch of Systems Analysis (1987-91); research hydrologist, National Research Program (1985-86); student assistant, Office of Ground Water (1984-85). Developed method to design monitoring networks for ground-water contamination sites; analyzed ground-water resources in the Appalachian-Piedmont region; assessed adequacy of water-quality data to evaluate progress under the Clean Water Act; evaluated effects of legislative proposals on USGS programs.

1980-83 **Professional Staff Member, U.S. Senate Committee on Environment and Public Works, Washington, DC**

Staffed Democratic members on the Water Resources Subcommittee; worked on the water resources development program of the Army Corps of Engineers; the 1981 amendments to the Clean Water Act and the 1980 Superfund law; developed amendments to the 1982 Reclamation Reform Act to reduce irrigation subsidies from Corps of Engineers' projects.

1979-80 **Legislative Assistant for Energy and Environmental Issues to Senator Daniel P. Moynihan, Washington, DC**

Contributed substantially to legislation authorizing the acid rain research program (NAPAP), the West Valley Demonstration Project for nuclear waste clean-up, and removal of PCBs from the Hudson River; tracked nuclear regulatory, energy, wilderness, and other environmental issues.

EDUCATION

Wellesley College, Wellesley, Massachusetts: chemistry, B.A., 1975.

Massachusetts Institute of Technology, Cambridge, Massachusetts: Department of Civil Engineering, Water Resources Division, M.S. in Civil Engineering, 1978.

The Johns Hopkins University, Baltimore, Maryland: Department of Geography and Environmental Engineering, Ph.D., 1987.

BOARD AND COMMITTEE MEMBERSHIP, APPOINTMENTS, AND AWARDS

Henry Luce Foundation: Board of Directors, 2013-present; Luce Scholars Selector, 1997-2018; Luce Scholar, 1978-79.

The Asia Foundation: Board of Trustees, 2020-present.

National Socio-Environmental Synthesis Center External Advisory Board: 2018-present

The Johns Hopkins University: Advisory Committee of the Department of Environmental Health and Engineering, 2017-present; Advisory Committee of the Department of Geography and Environmental Engineering, 2012-2016; Whiting School of Engineering National Advisory Committee, 2002-2006.

American University, Advisory Committee to the Center for Environmental Policy, 2010-2012.

National Science Foundation, Advisory Committee to the Engineering Directorate, 2003-2006; co-chair, Committee of Visitors for the Bioengineering and Environmental Systems Program, Engineering Directorate.

Carnegie Mellon University: Advisory Committee of the Center for the Study and Improvement of Regulation, 2003-2005.

University of Texas at Austin, Visiting Scholar, LBJ School of Public Affairs, 1997 to 2000.

Wellesley College Alumnae Achievement Award, 2016, Wellesley College Alumnae Association.

Woodrow Wilson Award for Distinguished Government Service, 2001, The Johns Hopkins University Alumni Association.

U.S. Geological Survey: Special Achievement Awards in 1986, 1989, and 1990.

ACTIVITIES IN PROFESSIONAL ORGANIZATIONS

National Academy of Sciences / National Research Council:

Committee to Review the New York City Department of Environmental Protection's Operations Support Tool (chair), 2016-2018.

Water Science and Technology Board, 2012-2015.

Committee on National Water-Quality Assessment (NAWQA) Program, 2009-2012

Committee on USGS Water Resources Research, 2009-2012.

Committee on Assessment of Water Resources Research for the Nation, member, 2002-2004

Commission on Geosciences, Environment, and Resources, member, 1995-2001

Committee on Science and Technology Policy Aspects of Selected Social and Economic Issues in Russia, member, 1999-2001

Board on Radioactive Waste Management: Committee on Remediation of Buried and Tank Waste, member, 1992; Panel for the Review of the DOE Environmental Restoration Priority System, member, 1992

American Geophysical Union: member; Development Committee, member, 2008-2012; *Water Resources Research* Direction and Review Committee, member, 1999; Public Affairs Committee, member, 1986-88, 1992-93, 1996-98; Public Information Committee, member 1988-90, chair, 1990-92; Nominations Committee, member, 1992-93.

American Society for Civil Engineers, Task Committee on Groundwater Monitoring Network Design, corresponding member, 1990-91.

PUBLICATIONS

RAND and other publications

Miro, Michelle E., Krista Romita Grocholski, Debra Knopman, Jordan R. Fischbach, Sara Schwetschenau, and Kyle Haak, Chesapeake Bay Model Inventory and Selection Tool (MIST). Santa Monica, CA: RAND Corporation, 2021.

Knopman, Debra, Don Snyder, Irv Blickstein, David E. Thaler, James A. Leftwich, Colby Peyton Steiner, Quentin E. Hodgson, Elaine Simmons, Krista Romita Grocholski, and Yvonne K. Crane, Proposed Analytical Products for the Air Force Warfighting Integration Capability: Developing and Presenting Options for Future Force Design and Capability Development. Santa Monica, CA: RAND Corporation, 2020.

Spirtas, Michael, Yool Kim, Frank Camm, Shirley M. Ross, Debra Knopman, Forrest E. Morgan, Sebastian Joon Bae, M. Scott Bond, John S. Crown, and Elaine Simmons, Creating a Separate Space Force: Challenges and Opportunities for an Effective, Efficient, Independent Space Service. Santa Monica, CA: RAND Corporation, 2020.

Lempert, Robert J., James Syme, George Mazur, Debra Knopman, Garrett Ballard-Rosa, Kacey Lizon, and Ifeanyi Edochie, Meeting Climate, Mobility, and Equity Goals in Transportation Planning Under Wide-Ranging Scenarios: A Demonstration of Robust Decision Making, *Journal of the American Planning Association*, 2020.

Spirtas, Michael, Yool Kim, Frank Camm, Shirley M. Ross, Debra Knopman, Forrest E. Morgan, Sebastian Joon Bae, M. Scott Bond, John S. Crown, and Elaine Simmons, A Separate Space: Creating a Military Service for Space. Santa Monica, CA: RAND Corporation, 2020. https://www.rand.org/pubs/research_reports/RR4263.html.

Spirtas, Michael, Yool Kim, Frank Camm, Shirley M. Ross, Debra Knopman, Forrest E. Morgan, Sebastian Joon Bae, M. Scott Bond, John S. Crown, and Elaine Simmons, Creating a Separate Space Force: Challenges and Opportunities for an Effective, Efficient, Independent Space Service. Santa Monica, CA: RAND Corporation, 2020. https://www.rand.org/pubs/research_briefs/RB10103.html.

Fischbach, Jordan R., Krista Romita Grocholski, Debra Knopman, Valerie Washington, Alan Cohn, and John Brock, Climate-Resilient Planning for Urban Stormwater and Wastewater Utilities: Workshop Proceedings, Water Research Foundation, 2020.

Miller, Benjamin M., Debra Knopman, Liisa Ecola, Brian Phillips, Moon Kim, Nathaniel Edenfield, Daniel Schwam, and Diogo Prosdocimi, U.S. Airport Infrastructure Funding and Financing: Issues and Policy Options Pursuant to Section 122 of the 2018 Federal Aviation Administration Reauthorization Act. Santa Monica, CA: RAND Corporation, 2020.

Leftwich, James A., Debra Knopman, Jordan R. Fischbach, Michael J. D. Vermeer, Kristin Van Abel, and Nidhi Kalra, Air Force Capability Development Planning: Analytical Methods to Support Investment Decisions. Santa Monica, CA: RAND Corporation, 2019.

Narayanan, Anu, Debra Knopman, Kristin Van Abel, and Benjamin Miller, Valuing Air Force Electric Power Resilience: A Framework for Mission-level Investment Prioritization, Santa Monica, CA: RAND Corporation, 2019.

Knopman, Debra, Martin Wachs, Benjamin M. Miller, Scott G. Davis, Katherine Pfrommer, Renewing America's Infrastructure: An Agenda for Federal Transportation and Water Policy, Public Works Management & Policy, August 21, 2018.

Fischbach, Jordan R., Debra Knopman, Heather Smith, Philip Orton, Eric W. Sanderson, Kim Fisher, Nerissa Moray, Adam Friedberg, and Adam Parris, Building Resilience in an Urban Coastal Environment: Integrated, Science-Based Planning in Jamaica Bay, New York. Santa Monica, CA: RAND Corporation, 2018.

Groves, David G., Debra Knopman, Neil Berg, Craig A. Bond, James Syme, and Robert J. Lempert, Adapting Land Use and Water Management Plans to a Changing Climate in Miami-Dade and Broward Counties, Florida. Santa Monica, CA: RAND Corporation, 2018.

Cohen, Deborah and Debra Knopman, Existing Regulatory Approaches to Reducing Exposures to Chemical- and Product-based Risk and Their Applicability to Diet-Related Chronic Disease, Risk Analysis, April 2018.

Knopman, Debra, Martin Wachs, Benjamin M. Miller, Scott G. Davis, and Katherine Pfrommer. Not Everything Is Broken: The Future of U.S. Transportation and Water Infrastructure Funding and Finance. Santa Monica, CA: RAND Corporation, 2017.

Knopman, Debra, Martin Wachs, Benjamin M. Miller, Scott G. Davis, and Katherine Pfrommer, Fixing U.S. Infrastructure's Ills Requires an Accurate Diagnosis. Santa Monica, CA: RAND Corporation, 2017.

Narayanan, Anu, Debra Knopman, James D. Powers, Bryan Boling, Benjamin M. Miller, Patrick Mills, Kristin Van Abel, Katherine Anania, Blake Cignarella, and Connor P. Jackson. Air Force Installation Energy Assurance: An Assessment Framework. Santa Monica, CA: RAND Corporation, 2017.

Berg, Neil, Debra Knopman, Benjamin F. Hobbs, Klaus Keller, and Robert E. Nicholas. Resilience to a Changing Climate in the Chesapeake Bay Watershed: Progress, Challenges, Information Gaps, and Opportunities. Santa Monica, CA: RAND Corporation, 2017.

Strong, Aaron and Debra Knopman. Landscape Survey to Support Flood Apex National Flood Decision Support Toolbox: Definitions and Existing Tools. Santa Monica, CA: RAND Corporation, 2017.

Groves, David, Debra Knopman, James Syme, Nidhi Kalra and Zhimin Mao. Evaluation of the Jinan City Water Ecological Development Implementation Plan and Recommendations for Improvement. Santa Monica, CA: RAND, 2017.

- Hoehn, Andrew R., Richard H. Solomon, Sonni Efron, Frank Camm, Anita Chandra, Debra Knopman, Burgess Laird, Robert J. Lempert, Howard Shatz and Casimir Yost. *Strategic Choices for a Turbulent World: In Pursuit of Security and Opportunity*. Santa Monica, CA: RAND, 2017.
- Knopman, D. and R.J. Lempert, *Urban Responses to Climate Change: Framework for Decisionmaking and Supporting Indicators*, RR-1144-MCF, RAND, 2016.
- Sanderson, Eric W., Philip Orton, Jordan R. Fischbach, Debra Knopman, Hugh Roberts, William D. Solecki, Jim Fitzpatrick, Scott C. Hagen, James T. Morris, and Robert Wilson, *Computational Modeling of the Jamaica Bay System*, Pages XX in (Ed.) Sanderson, E.W., W.D. Solecki, J.R. Waldman, and A.S. Parris, *Prospects for Resilience: Insights from New York City's Jamaica Bay*, Island Press, Washington, D.C., 2016.
- Knopman, D., J. Zmud, L. Ecola, Z. Mao, and K. Crane. *Quality of Life Indicators and Policy Strategies to Advance Sustainability in the Pearl River Delta*. Santa Monica, CA: RAND, 2015.
- Crane, K., D. Knopman, N. Burger, A. Narayanan, J. Powers, and H. Willis. *Scenario Development for the 2015 Quadrennial Energy Review: Assessing the Stresses, Opportunities, and Resilience in the Transmission, Storage, and Distribution Systems for Oil, Refined Products, Electricity, and Natural Gas*. RAND, 2016.
- Knopman, D., J.R. Fischbach, D.G. Groves, and R.J. Lempert, *The Challenge of Adaptation Under Deep Uncertainty: An Organizing Principle for Future Water Resources Research*, *Water Resources Impact Magazine*, American Water Resources Association, 16(1), 2014.
- Finucane, M.L., N. Clancy, H.H. Willis and D. Knopman. *The Hurricane Sandy Rebuilding Task Force's Infrastructure Resilience Guidelines: An Initial Assessment of Implementation by Federal Agencies*. RR-841-DHS, RAND, 2014.
- Groves, D.G., J.R. Fischbach, D. Knopman, D.R. Johnson and K. Giglio. *Strengthening Coastal Planning: How Coastal Regions Could Benefit from Louisiana's Planning and Analysis Framework*. RR-437, RAND, 2014.
- Groves, D.G., J.R. Fischbach, E. Bloom, D. Knopman and R. Keefe. *Adapting to a Changing Colorado River: An Interactive Research Brief*. RB-9750, RAND, 2013.
- Groves, D.G., J.R. Fischbach, E. Bloom, D. Knopman and R. Keefe. *Adapting to a Changing Colorado River: Making Future Water Deliveries More Reliable Through Robust Management Strategies*. RR-242, RAND, 2013.
- Davis, L. E. and D. Knopman. *Written Testimony on S. 1240 – Nuclear Waste Administration Act of 2013*. CT-398, RAND, 2013.
- Groves, D.G., J.R. Fischbach, D. Knopman, C. Sharon, D. R. Johnson, D. S. Ortiz, B. P. Bryant, M. Hoover and J. Ostwald. *Addressing Coastal Vulnerabilities Through Comprehensive Planning: How RAND Supported the Development of Louisiana's Comprehensive Master Plan*. RB-9696, RAND, 2013.

- Groves, D.G., J.R. Fischbach, D. Knopman, C. Sharon, D. R. Johnson, D. S. Ortiz, B. P. Bryant, M. Hoover and J. Ostwald. Taking a Comprehensive Planning Approach to Address Coastal Vulnerabilities. RB-9697, RAND, 2013.
- Groves, D.G., C. Sharon, and D. Knopman. Planning Tool to Support Louisiana's Decisionmaking on Coastal Protection and Restoration: Technical Description, TR-1266, RAND 2012.
- Davis, L.E., D. Knopman, M. Greenberg, L. Miller, and A. Doll. Choosing a New Organization for Management and Disposition of Used Nuclear Fuel and Defense High-level Nuclear Waste, MG-1230-DOE, RAND 2012.
- LaTourrette, T., T. Light, D. Knopman, and J. Bartis. Managing Spent Nuclear Fuel: Technical Approaches and Policy Options, MG-970-RC, RAND, 2010.
- Greenfield, V.A., D. Knopman, E. Talley, G. Bloom, E. Balkovich, D.J. Peterson, J.T. Bartis, S. Rattien, R. Rettig, M.Y.D. Wang, M. Mattock, J. Najjar, M.C. Libicki. Design of the Qatar National Research Fund: An Overview of the Study Approach and Key Recommendations, TR-209-QF, RAND, 2008.
- Groves, D.G., D. Knopman, R.J. Lempert, S.H. Berry, L. Wainfan. Presenting Uncertainty About Climate Change to Water-Resource Managers: A Summary of Workshops with the Inland Empire Utilities Agency, TR-505, RAND, 2008.
- Groves, D.G., R.J. Lempert, D. Knopman, S.H. Berry. Preparing for an Uncertain Future Climate in the Inland Empire: Identifying Robust Water-Management Strategies, DB-550-NSF, RAND, 2008.
- Groves, D.G., D. Knopman, R.J. Lempert, S.H. Berry, L. Wainfan. Identifying and Reducing Climate-Change Vulnerabilities in Water-Management Plans, RB-9315-NSF, RAND, 2008.
- Kahan, J.P., M. Wu, S. Hajiamiri, D. Knopman. From Flood Control to Integrated Water Resource Management: Lessons for the Gulf Coast from Flooding in Other Places in the Last Sixty Years, OP-164, RAND, 2006.
- Kahan, J.P., M. Wu, S. Hajiamiri, D. Knopman. Preparing for Future Floods: Analyzing Reconstruction Pathways from Past Floods Can Help, RB-9220-RC, RAND, 2006.
- Knopman, D. Success Matters: Recasting the Relationship among Geophysical, Biological, and Behavioral Scientists to Support Decision Making on Major Environmental Challenges, *Water Resources Research*, v. 42, no. 3, Mar. 2006, p. W03S09, also available as a reprint (LRP-20060328, RAND, 2006).
- MacDonald, J., D. Knopman, N. Clancy, J. McEver, H.H. Willis. Transferring Army Land Containing UXO: Problems and Solutions, RB-9057-A, RAND, 2005.

- MacDonald, J., D. Knopman. Risky Business: Assessing the Potential Harm from Unexploded Ordnance, RB-3043-A, RAND, 2004.
- MacDonald, J., D. Knopman, J. McEver, H. Willis, and N. Clancy. Transferring Army BRAC Lands Containing Unexploded Ordnance: Lessons Learned and Future Options, MG-199-A, RAND, 2004.
- MacDonald, J., D. Knopman, J.R. Lockwood, G. Cecchine, and H. Willis. Unexploded ordnance: A critical review of risk assessment methods, MR-1674-A, RAND, 2004.
- Knopman, D.S. Assessing gas and oil resources, Congressional testimony CT-210, RAND, June 2003.
- Knopman, D., S. Resetar, P. Norling, R. Rettig, and I. Brahmakulam. Systems of innovation within public and private organizations: case studies and options for EPA, DB-393, RAND, April 2003.
- Hassell, S., A. Wong, A. Houser, D. Knopman, and M. Bernstein. Building better homes: government strategies for promoting innovation in housing, MR-1658-HUD/PATH, RAND, 2003.
- LaTourrette, T., M. Bernstein, M. Hanson, D. Knopman, and A. Overton, Assessing natural gas and oil resources: An example of a new approach in the Greater Green River Basin, MR-1683-WFHF, RAND, April 2003.
- LaTourrette, T., M. Bernstein, P. Holtberg, C. Pernin, B. Vollaard, M. Hanson, K. Anderson, D. Knopman. A New Approach to Assessing Gas and Oil Resources in the Intermountain West, IP-225, RAND, 2002.
- LaTourrette, T., M. Bernstein, P. Holtberg, C. Pernin, B. Vollaard, M. Hanson, K. Anderson, D. Knopman. Assessing Gas and Oil Resources in the Intermountain West: Review of methods and framework for a new approach, MR-1553, RAND, 2002.
- Knopman, D. Assessing gas and oil resources in the intermountain West, CT-195, RAND, April 2002.
- Lachman, B.E., A. Wong, D. Knopman, and K. Gavin, Lessons for the Global Spatial Data Infrastructure: International Case Study Analysis, DB-380-USGS, RAND, 2002.
- Knopman, D. (ed.), Volume I, E-Vision 2000: Key Issues That Will Shape Our Energy Future; Summary of Proceedings, Scenario Analysis, Expert Elicitation, and Submitted Papers, CF-170-DOE; and Volume II E-Vision 2000: Key Issues That Will Shape Our Energy Future: Analyses and Papers Prepared for the E-Vision 2000 Conference, CF-170/1-1-DOE, RAND, June 2001.

Selected commentary since 2012

Knopman, Debra and Benjamin Miller. Progress on Infrastructure, but the Devil May Be in the Details, *The Hill*, May 21, 2021.

Knopman, Debra, Krishna B. Kumar, Howard J. Shatz, and Jennifer Kavanagh, The Economic Wallop of COVID-19: Q&A with RAND Experts, March 26, 2020.
<https://www.rand.org/blog/2020/03/the-economic-wallop-of-covid-19-qa-with-rand-experts.html>

Pardo, Bryce and Debra Knopman. Want to Know If a New Drug Crisis is Growing? Check the Wastewater. *Scientific American*. March 23, 2020.

Knopman, Debra and Martin Wachs. The Long Game on Infrastructure. *U.S. News and World Report* commentary. February 20, 2018.

Knopman, Debra and David Catt. How Federal Policy Could Help Water and Wastewater Utilities. *Inside Sources* commentary. January 16, 2018.

Preston, Benjamin L., Nicholas Burger, Marjory S. Blumenthal, Robert J. Lempert. When It Comes to Climate, Look to Vulnerabilities in Policy, Not Science. *The Hill* commentary. August 4, 2017.

Knopman, Debra and Robert Lempert. The Big Bet: Withdrawing from the Paris Climate Agreement. *Inside Sources* commentary. June 2, 2017.

Knopman, Debra. Impact on the Environment from President Trump's First 100 Days. *BBC* commentary. May 4, 2017.

Lempert, R.J. and D. Knopman, With Trump in the White House, States Could Step Up on Climate Change, November 25, 2016. Originally appeared on *Fox News* Channel.
<http://www.rand.org/blog/2016/11/with-trump-in-the-white-house-states-could-step-up.html>

Lempert, R.J., D. Knopman, and J. Fischbach, COP21: Ambition and Momentum, *The RAND Blog*, December 17, 2015.

LaTourrette, T. and D. Knopman, Breaking Nuclear Waste as a Two-Part Issue, *Las Vegas Sun*, May 5, 2015.

Knopman, D.S., R. Lempert, and J.R. Fischbach, Future of coastal flooding, Congress Blog: The Hill's Forum for Lawmakers and Policy Professionals, February 25, 2015.
<http://thehill.com/blogs/congress-blog/energy-environment/233695-future-of-coastal-flooding>, 2015.

Greathouse, S.M., B.A. Jackson, K.J. Riley, A.R. Morral, D. Knopman, A.L. Kellermann, Firearms and Gun Control: Many Questions, Some Answers, *The RAND Blog*, January 17, 2013.

Knopman, D.S., J.R. Fischbach, and D.G. Groves, What Louisiana can teach New York and New Jersey, *CNN Global Public Square Blog*, November 2, 2012.
<http://globalpublicsquare.blogs.cnn.com/2012/11/08/what-louisiana-can-teach-new-york-and-new-jersey/>, 2012.

Selected policy publications prior to 2002

Knopman, D.S., Greening by the numbers, Version 1.0: Many blanks still need to be filled on environmental performance measures, *Inside EPA's Risk Policy Report*, Vol. 8, No. 8, p. 33, May 13, 2001.

Knopman, D.S., License to innovate: An agenda to modernize the tools of environmental protection, *Blueprint: A New Democrat agenda for governing*, Vol. 9, pp. 50-54, Winter 2001

Knopman, D.S., Sell smog now!, *Blueprint: The Quality of Life*, Vol. 8, pp. 30-33, Fall 2000.

Knopman, D.S. and M.K. Landy, A new model of governance, *Blueprint: The Quality of Life*, Vol. 8, pp. 34-35, Fall 2000.

Knopman, D.S., Competition in the electric utility industry: Rewire regulation to make markets work for consumers and the environment, Policy Brief, Progressive Policy Institute, April 2000.

Knopman, D.S. and J. Naimon, How a domestic greenhouse gas emissions trading market could work in practice: A supplement to the November 1999 policy report "Reframing the climate change debate," Backgrounder, Progressive Policy Institute, March 2000.

Bates, J. and D.S. Knopman, Beyond the Seattle debacle: A third way on trade and the environment, *Environmental Forum: The Policy Journal of the Environmental Law Institute*, Volume 17, No. 1, January-February 2000.

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Knopman, D.S. and E. Fleschner, Second generation of environmental stewardship: Improve environmental results and broaden civic engagement, Progressive Policy Institute Policy Brief, May 1999.

Knopman, D.S., The revolt against sprawl: Politicians everywhere are searching for solutions to poorly planned local development, *The New Democrat*, March/April 1999, pp. 8-11.

Landy, M.K, M.M. Susman, and D.S. Knopman, Civic environmentalism in action: A field guide to local and regional initiatives, Progressive Policy Institute Report, January 1999.

Knopman, D.S., Regulatory reform defanged: An acceptable agreement on benefit-cost analysis has finally been reached, Progressive Policy Institute Backgrounder, September 1998.

Knopman, D.S., Waste site clean ups in slow motion: Congress needs to fix the RCRA clean-up program, Progressive Policy Institute, September 1998.

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Knopman, D.S., A new bargain on air quality: Support the new standards and legislation to authorize new tools to achieve them, Progressive Policy Institute, Policy Brief, September 29, 1997.

Knopman, D.S., The battle over good science, review of *Betrayal of Science and Reason: How the anti-environmental rhetoric threatens our future*, in *The New Democrat*, February-March, 1997.

Knopman, D.S., Easier to be green, environmental policy chapter in *Building the Bridge: Ten Big Ideas for Transforming America*, Will Marshall (ed.), Rowman & Littlefield, 1997.

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The End of Recycling?, August 8, 1996.

Up and Down the Grand Staircase: Scenic Beauty, Great Politics, Less Than Good Government, September 26, 1996.

Environmental Values and the Bottom Line, November 14, 1996.

Environmental Policy in 1997: Slouching Toward Incrementalism, January 2, 1997.

Pennywise, Billions Foolish: The Folly of Underinvesting in Environmental Monitoring, April 24, 1997.

Righting the Wrongheaded Debate About the New Air Quality Standards, July 24, 1997.

A Plan for U.S. Leadership on Global Warming, November 27, 1997.

Shades of Green: The Clash Between Popular Values and Partisan Politics, February 26, 1998.

How to Clean Up Waste Sites?, July 23, 1998.

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Buy Land, Fight Sprawl, June 24, 1999.

It's Time for SUVs to Meet the Fairness Test, November 4, 1999.

How to Buy Electrons: Caveat Emptor, April 13, 2000.

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Knopman, D.S., This land is our land: Launching the second generation of environmental action, *The New Democrat*, 8(3), 6-9, 1996.

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Technical journal articles prior to 1993

Knopman, D.S., and E.F. Hollyday, Variation in specific capacity in fractured rocks, Pennsylvania, 31(1), 135-145, *Ground Water*, 1993.

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